Applicant(s):   Prahlad et al.
Application No.:   10/681,386
Title: SYSTEM AND METHOD FOR SNAPSHOT STORAGE
                   MANAGEMENT WITH INDEXING AND USER INTERFACE
Docket No.:   60692.8008US01

1.   The claimed invention

Typically, a quick recovery volume is created by copying data from a primary volume of a data set directly to a locally stored volume. That is, input to or output from a volume of data is suspended, copying of data occurs, and then input/output resumes. This can cause problems because direct copying of the data can be time consuming and it is often undesirable to suspend access to a primary volume of data for any extended period of time.

The claimed invention describes creating a quick recovery volume in two phases: (1) a snapshot phase and (2) a copy phase. The snapshot phase acts to create a snapshot copy, or image, of a primary volume of data. The copy phase then utilizes the snapshots in creating a quick recovery volume. The copy phase may do so in a number of ways, including:

copying the data to a quick recovery volume using snapshot images (see claim 1) as a vehicle, or

copying the data to a quick recovery volume by storing snapshot images in the recovery volume.

The two phase approach allows for the creation of a quick recovery volume while minimizing the suspension of access of a primary volume of data to the duration of a snapshot.

2.   The St. Pierre reference.

St. Pierre discloses incremental backup. St. Pierre does not disclose creating a quick recovery volume as discussed above.

3.   Amendments to the claims.

1.   (Currently Amended) A method of ~~managing stored~~creating a copy of a primary volume of data in a storage management system, the storage management

system including a storage manager, a media agent connected to the storage manager, and a primary volume connected to the media agent, the method comprising:

taking a first snapshot of the primary volume in accordance with a predefined policy, the policy comprising one or more parameters for creating a quick recovery volume;

indexing the first snapshot by associating respective information with the snapshot;

taking a second snapshot, in accordance with the predefined policy, wherein the second snapshot only images changes made to the primary volume after the first snapshot was taken;

selecting the first or second snapshot for copying to a ~~corresponding~~ quick recovery volume associated with the one or more parameters;

performing a block-level copy of the selected snapshot to the ~~corresponding~~ quick recovery volume; and

deleting the selected snapshot after the block-level copy is complete.

14.   (Currently Amended) A method for periodically copying changing data on a primary volume, the method comprising:

~~capturing~~ performing a first snapshot of data in a primary volume in accordance with a predefined policy, the first snapshot being a block level ~~copy~~ image of the data in the primary volume and the policy comprising one or more parameters for creating a quick recovery volume;

storing the first snapshot;

in accordance with at least a second criteria specified in the policy, monitoring for a change in any one of the blocks ~~stored in~~ imaged by the first snapshot; and

~~storing a copy of~~ performing a second snapshot of a particular block when the monitoring determines that there was a change in the particular block ~~from~~ after the first snapshot;

~~selecting the first snapshot for~~ copying the first snapshot to a ~~corresponding~~ quick recovery volume associated with the one or more parameters; and,

~~performing a block level copy of the selected snapshot to the corresponding~~ copying the second snapshot to the quick recovery volume.